

SCOPE OF CLAIMS

1. An ultrasound diagnostic apparatus comprising:
 - a probe which is put onto an object to be examined for transmitting and receiving an ultrasound wave;
 - means for generating a tomographic image by receiving a reflected echo signal corresponding to the transmitted ultrasound wave;
 - means for measuring a displacement of the object's tissue and calculating elasticity information from a reflected echo signal corresponding to an ultrasound wave while a pressure to be applied is changed when the probe is put on the object, and generating a color elasticity image from the elasticity information;
 - means for generating a translucent image on the basis of image information of at least one of the tomographic image and the color elasticity image; and
 - means for selectively displaying the tomographic image, the color elasticity image, and the translucent image.
2. An ultrasound diagnostic apparatus according to claim 1, wherein the translucent image generating means further includes means for overlapping the tomographic image generated by the tomographic image generating means and the color elasticity image generated by the elasticity image generating means to generate a translucent image on the basis of a desired overlapping ratio.
3. An ultrasound diagnostic apparatus according to claim 2, wherein the translucent image generating means generates a translucent image by determining the overlapping ratio between the tomographic image and of the color elasticity image on the basis of the elasticity information calculated by the elasticity image generating means.
4. An ultrasound diagnostic apparatus according to claim 2, wherein the translucent image generating means further includes pressure

measuring unit attached to the probe for measuring information of the pressure applied to the object, and generates translucent image data by setting a desired combination ratio of the color elasticity image data calculated by the elasticity image generating means and of the tomographic image data calculated by the tomographic image generating means on the basis of the pressure information measured by the pressure measuring unit.

5. An ultrasound diagnostic apparatus according to claim 2, wherein the translucent image generating means further includes means for calculating a mean value of the tomographic image, means for calculating a mean value of color brightness of the elasticity image, means for calculating a coefficient with which those calculated mean values are equalized, and means for calculating a combination ratio of the elasticity image by multiplying each image pixel of the tomographic image by the calculated coefficient.

6. An ultrasound diagnostic apparatus according to claim 4, wherein the translucent image generating means further includes means for variably setting a region of interest (ROI) of the color elasticity image data, and forms translucent combined image data of the ROI.

7. An ultrasound diagnostic apparatus according to claim 2, wherein the translucent image generating means includes calculating means for separating the brightness information of the tomographic image into three primary colors and calculating translucent image information from the separated three primary colors and hue information of the color elasticity image.

8. An ultrasound diagnostic apparatus according to claim 1, wherein the display means further includes means for selectively displaying a numerical value of either combination ratio of the elasticity image or that of the tomographic image.

9. An ultrasound diagnostic apparatus according to claim 1, wherein

the translucent image generating means further includes an outline detecting means for detecting a borderline between tissues having different elastic behavior in the color elasticity image on the basis of the set threshold of the elasticity information calculated by the elasticity image generating unit and means for generating a combined image of the detected outline and the generated tomographic image.

10. An ultrasound diagnostic apparatus according to claim 8, wherein the outline detecting means changes at least one among thickness, color, and line type of the borderline on the basis of the elasticity information calculated by the elasticity image generating means.

11. An ultrasound diagnostic apparatus according to claim 1, wherein the display selecting means further includes means for respectively storing the tomographic image information, the elasticity image information, and the translucent combined image information, and switches the stored tomographic image information and elasticity image information to selectively display them on the display unit.

12. An ultrasound diagnostic apparatus according to claim 11, wherein the storing means further includes means for storing the tomographic image data, the elasticity image data, and the translucent combined image data and arbitrarily setting a timing of switching those image data.

13. An ultrasound diagnostic apparatus according to claim 1, wherein the translucent image generating means further includes display address calculating means for respectively calculating an image display address of the tomographic image data and of the elasticity image data, and image generating means for assigning pixels of the tomographic image data and the elasticity image data to the calculated display address and generating the combined image.

14. An ultrasound diagnostic apparatus according to claim 13, wherein the display address calculating means performs calculation so as to display the tomographic image data and the color elasticity image data in

a striped pattern.

15. An ultrasound diagnostic apparatus according to claim 13, wherein the display address calculating means performs calculation so as to display the tomographic image data and the color elasticity image data in a check pattern.

16. An ultrasound diagnostic apparatus according to claim 1, wherein the image information of the tomographic image is gain information of the tomographic image generated by the tomographic image generating means.

17. An ultrasound diagnostic apparatus according to claim 1, wherein the image information of the color elasticity image is the elasticity information calculated by the elasticity image generating unit.

18. An ultrasound diagnostic apparatus according to claim 1, wherein the translucent image generating means further includes means for forming a translucent combined image of the tomographic image generated by the tomographic image generating means and the color elasticity image generated by the elasticity image generating means on the basis of a desired combination ratio.

19. An ultrasound diagnostic apparatus according to claim 2, wherein the translucent image generating means forms a translucent combined image while setting combination ratios of the tomographic image and of the color elasticity image on the basis of the elasticity information calculated by the elasticity image generating unit.

20. An ultrasound diagnostic apparatus according to claim 2, wherein the translucent image generating means further includes pressure measuring means attached to the probe for measuring information of the pressure applied by the probe to the object, and obtains a translucent image data while setting a desired combination ratio of the tomographic image data and of the color elasticity image data on the basis of the pressure information measured by the pressure measuring unit.